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ABSTRACT

The study examined the development of self management skills with a total of 59 profoundly retarded adult Ss participating in two projects designed to improve skill in following instructions, sharing materials, and performing a simple vocational task (sanding). Criteria for self management was the performance of a task or following of an instruction without additional prompts or assistance. In the first study, Ss' self management skills were observed during group instruction in the sanding task and following two sets of instructions concerning social skills (such as "Come to me"). Results indicated that the criteria used effectively measured self management skills and that Ss did improve their self management skills as a result of the instructional program. During the second project, 47 Ss were given daily group training sessions in the same skills. Results indicated that the majority of the Ss learned to follow instructions and to interact socially with each other and the therapists as well as perform the sanding task. Self management skills demonstrably improved during the 8 weeks of training. Appended tables and figures provide detailed data for both studies. (DB)

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Facilitating Self Management in Social Interactions Among the Profoundly Developmentally Disabled

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Abstract

The issue of self management is addressed in behavioral literature within the context of discrimination training, philosophy, and as a functional method in group and individual behavior change procedures. The present study defines criteria which might be applied to identify degrees of self management as defined by the acquisition of social skills of profoundly retarded persons.

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Facilitating Self Management in Social Interactions Among the Profoundly Developmentally Disabled

The concept of self control has been applied with behavioral procedures to facilitate dieting, studying, nonsmoking, verbal behavior changes, treatment of phobias, teaching methodology, problem solving, data collection, feedback and various individual and group behavior change programs (Bandura and Walters, 1963; Antonelli, 1973, 1974; Brickey, 1978; Litrownik, Franzini, Geller, and Geller, 1977; Glynn, Thomas, and Shee, 1973; Wasick, Senn, Welch, and Cooper, 1969; Fixen, Phillips, and Wolf, 1972; Mahoney and Mahoney, 1976; Skinner, 1953; Tharp and Wetzel, 1979; Mazar and Logue, 1978; Karen, Wehman, Renzaglia, and Shultz, 1977; Micheal, 1974; Walls, 1973; Glynn, 1970; Glynn and Thomas, 1974; Ballard and Glynn, 1975; Litrownik, Freitas, and Franzini, 1978; Suedfeld and Hare, 1977; Rachlin, 1974; Morena and Litrownik, 1974; Thoreson and Mahoney, 1974).

Bandura and Walters (1963) propose that the individual's self control is regulated and developed by social demands, customs, cultural schedules and routines. They further emphasize that even the most basic socialization processes (acquisition of feeding and toileting skills) involve degrees of self control development. Skinner (1974) describes the issue of self (self management) as a function of various schedules of reinforcement, punishment, discrimination skills, stimulus control variables and deprivation states.

Various researchers have divided self control into areas or components for study. Azrin, Flore, and Kaplin (1975), Azrin and Powell (1969), Brickey (1978), and Wasik (1969), describe one component of self management or self independence as related to a person learning self medication skills, personal hygiene skills, and working independently without immediate supervision or assistance from other persons.

Few studies have been conducted applying the self management concept with the profoundly retarded client population (Karen, et.al., 1977; Jackson and Antonelli, 1973; Antonelli, Jackson, and Chantry, 1973). Recently studies and philosophical articles have appeared which address the issue of self control with the mentally retarded (Mahoney and Mahoney, 1976; Kurtz and Neisworth, 1976; Wehman, 1975; Brickey, 1978), but to date few criteria for assessing self management have been specified for persons with profound retardation.

The process of describing the relationship between external variables and self management requires more research. Some studies reviewed by this author did not appear to completely account for external controlling variables such as 1) presence of the experimentor in self management studies, 2) limits on how much of a reinforcer a person could "self determine", 3) preventing a person from obtaining reinforcers during self reinforcement conditions, 4) externally imposed performance criteria which did not allow subjects to discriminate if they were on task or off task, and 5) the effect of external variables e.g. clocks and tape recorded sounds, which appeared to serve as antecedents for self management skills (Karen, et.al., 1977; Glynn, Thomas, and Shee, 1973; Ballard and Glynn, 1975; Santograssi, Cleary,

Romancsyk, and Kaufman, 1973; Litrownik, et.al., 1978; Nelson, Lipinski, and Black, 1976; Antonelli, 1973; Berman, 1973).

Brickey (1978) utilized tokens to reinforce moderately and severely retarded persons for taking medication without prompts. In another study Brickey described a study in which severely, moderately, and mildly retarded persons were reinforced with social praise for remembering to take medications without prompting. Wasik (1969) defined self independence as the client continuing to work on specified tasks in the presence of the instructor without prompting from the instructor. Karen, et.al. (1977) utilized the concept of self management in an individualized program with one profoundly and one severely retarded person. In this study the variable of self management was not clearly described due to instructor variables in giving instructions, providing materials, and presence sitting at the clients' table or in the workshop area. Jackson and Antonelli (1973) utilized a procedure in which the client could observe the token he was to receive while completing sorting tasks. The experimenter dispensed the token after each task was completed. Performance during this condition was compared to experimenter presence in two other reinforcement conditions: The experimenter pointed the token at the task when the client looked away from the task; and the experimenter pointed at the task with his finger when the client looked away. Jackson, Antonelli, and Chantry (1973) taught six profoundly retarded clients to utilize a token economy in which token exchanges were delayed so that all clients earned and saved tokens for a 60 minute period.

The present study investigated criteria which were discribed by Brickey (1978), Mahoney and Mahoney (1976), Jackson and Antonelli (1978), Congdon (1974), Kurtz and Neisworth (1976), and Wasik et.al. (1969), as methods to assess variables which might be utilized as indicators of self management with profoundly retarded persons. The present study reviewed two projects which were developed to establish the following social skills: Instruction following (cooperation with staff), sharing of materials (cooperation with staff and peers), vocational skills, and the treatment methods and techniques utilized.

The criteria for self management utilized in this study can be generally described as follows: If a person is given a task or instruction which he performs without additional prompts, he is then exhibiting greater self management skills than if he had required additional prompts in that specific social interaction (Bandura and Walters, 1963; Brickey, 1978; Wasik, et.al., 1969).

Self management in the present study was more specifically described as 1) the client responding to one verbal instruction from the instructor and not requiring additional prompts, 2) the client performs vocational tasks without verbal direction or assistance from the therapist, and 3) the client performs vocational tasks in the presence of the therapist after materials are presented without verbal instructions and/or additional prompts from the therapist.

The criteria specified in this study also were utilized to define the degree to which a client could self manage more independently when responding to verbal requests or instructions and performing vocational skills. The client who initially responded to instructions

or tasks requiring physical prompts from staff learned to respond requiring verbal prompts and thus self managed more independently.

PROJECT 1

Method

Subjects

The twelve subjects participating in this study were profoundly retarded male adults with IQ's which ranged from untestable to 24 as measured by standardized intelligence tests. One subject may have functioned higher than the profound range but no IQ was specified which indicated this.

Staff indicated that these subjects did not participate in programs due to their lack of self help skills, disruptive behavior, and limited social skills. This project was conducted within a shelter care facility in a rural community (Antonelli, Olson, Fodor, and Simms, 1978).

Procedure

Methods and techniques for structuring the group sessions and teaching social skills are discussed as follows:

Seating arrangement. Subjects were seated parallel so that they sat across from each other and the therapist stood at the end of the table or moved around it. The proximity of clients to therapist was from two to five feet (Zimmerman, Zimmerman, and Russell, 1969).

Sessions. Therapy sessions during pretest, baseline, and treatment conditions were 45 minutes in duration. The a.m. baseline conditions lasted approximately 30 to 45 minutes. The therapist was the same person for all sessions.

Rehearsal or practice. Social skills were practiced with all clients by repeating the instruction following activities after daily posttests were completed. Guided rehearsal was utilized to teach sanding skills (Allyon and Azrin, 1964; Streifel, Bryan, and Aikens, 1974; Whitman, Zakaros, and Chardos, 1971; Azrin and Lindsley, 1951; Obrian, Azrin, and Henson, 1969).

Guided rehearsal with cadence count. The therapist manually guided the client in performing the task using constant physical assistance. When guiding the client through the actions the therapist stated the action to be performed e.g. pick up the block, hold the block.

When the responses were repetitive and similar the therapist guided the first response and described the action e.g. "sand the board". After the client completed the second back and forth motion the therapist counted "one", after the third motion "two" and so forth to "ten". The therapist utilized fading procedures to reduce the physical assistance, gestural and verbal cues. This technique appeared to establish a sanding rhythm or motion as well as the sanding response (Antonelli, Chantry, Jackson, 1973; Antonelli, Olson, Hester, and Travis, 1978).

Reinforcement schedules. Social and edible reinforcers were used during treatment conditions B, B_2, B_3, and C (see Table 4).

Social reinforcers were used during baseline conditions A, A_2, and A_3 since this was naturally occurring in the subjects daily treatment conditions from continuous schedules to fixed ratio schedules in order to return to the naturally occurring conditions in compliance with the Joint Commission on Accreditation of Hospital Standards (1978).

This was accomplished by the General Reinforcement Schedule:

1. Each client was reinforced for coming to class after he sat down at his assigned work space.

2. When activity steps were introduced to clients, each client was taught step 1 prior to step 2. If a series of steps was presented, "Stand, come, pick up the clock, sit down," then each client was presented with the series prior to teaching additional steps.

3. After working with an individual the therapist reinforced the other group members for sitting quietly and staying dry prior to working with the next person. As the clients learned to stay seated this procedure was faded. For example, the therapist worked with two clients and then reinforced the others for staying seated.

4. When a client requested the use of the toilet and/or used the toilet when taken, the therapist reinforced him with compliments and edibles. The edibles were faded as the client learned to use the toilet.

5. After class when the clients arrived on the living unit or their next scheduled activity, the therapist reinforced them.

Staff-client interaction rating scale. When the client did not perform at target behavior criteria levels on social skill tasks or on the sanding task, then additional interactions or prompts were provided to assist the client in performing the appropriate response. The additional prompts were measured using the criteria specified in Table 1. The nine point scale also was used to define the a) degree to which clients could perform specific behaviors independently of various levels of staff assistance (Brickey, 1978, Wasik, 1969;

Jackson and Antonelli, 1978), and b) the degree of staff assistance which would facilitate social interactions (Berman, 1973; Jackson and Antonelli, 1978; Antonelli, Olson, Hester, and Travis, 1978).

Target behavior criterion for each social skill task was a staff-client interaction level of 7.0. Target behavior criteria for sanding skill tasks were not specified because the project did not include measures of the duration of sanding. Target behavior criterion for task steps 1 - 5 was performance at level 7.0 through 9.0 (see Tables 1 & 2).

Insert table 1 about here

Fading with graduated guidance. The therapist attempted to fade the amount of staff assistance or prompting with a graduated guidance technique. The therapist reduced physical, gestural, modeling, and verbal prompts as the client began to perform the task on his own. Verbal cues were presented with a recommended 10 second delay prior to providing additional prompts. When a client was observed to perform at greater degrees of independence on specific tasks then the therapist delayed providing additional prompts and repeated the prompt level at which the client previously responded, at least three times (Azrin, Shaeffer, and Weslowski, 1976; Albin, 1978; Congdon, 1974; Obrien and Bugle, 1972).

Presentation of social skill tasks and sanding tasks. When requests or instructions were given, the therapist stated the client's name prior to stating the request or instruction. Instructions were not given in consistent sequences but were randomly selected by the

therapist so that serial learning effects associated with response chaining could be avoided (Antonelli and Haseley, 1974). When requesting that clients walk to locations or to the therapist, the therapist varied his location as well as the locations to which the client was to walk. Clients were to self-administer edible reinforcers by picking them up from the table top as measured in activity 1.

The sanding task was presented by making materials available on the table in front of the client. If the client initiated sanding without 7 level instructions he was rated 8. Instructions to sand were given by stating the client's name before the instruction. Graduated rehearsal procedures were utilized when the client failed to respond to prompts 6 through 2 (see Table 2).

Insert Table 2 about here

Time out from group activities. When a client engaged in disruptive behavior directed at the task or others, the following procedure was conducted.

1. Time out from task. When the client hit others, destroyed the task or used it in an unacceptable manner, the therapist approached him in a neutral manner and removed the task or objects from the client's reach for 15 seconds. The therapist did not look at the client's face or interact with him during the 15 second period.

2. Time out at table sitting in chair. When the client attempted to leave his chair and approach another client or leave the area, the therapist escorted the client to his seat and required him to sit quietly. Graduated guidance methods were applied to seat the client

and teach the client to stay seated. The client sat quietly and did not resist for at least 30 seconds prior to removing physical guidance. After conducting any time out procedure, the client returned to his work space and had to behave in an acceptable manner for one minute before he was reinforced.

3. Staff requested assistance if the client did not respond to time out procedures.

Subject grouping. Twelve subjects were randomly assigned to three groups utilising a lottery selection method of drawing names. The therapist conducted sessions with four persons per group.

Data collection. The client was allowed to perform as much of the target behavior as possible at Table 1 criteria levels of 9, 8, and 7. The response component recorded was the first on which the client required staff assistance as defined by levels 6 through 1. The level of assistance recorded was the level at which the client performed the component or target behavior. The therapist recorded two numerical values per client per target behavior: First, level of staff-client interaction; and second, response component.

Insert Table 3 about here

Data analysis. When the response component recorded remained the same through all conditions, the analysis utilized was a comparison of staff-client interaction levels for the purpose of determining if the participant had performed more independently. The mathematical operation used to summarize data for comparison was the mean level of staff-client interaction at various activity steps.

When the response components recorded were different through all conditions, the analysis utilized was a comparison of component levels for the purpose of determining if the participant acquired more components of the target behavior at staff-client interaction criteria levels. The response components recorded were compared utilizing the same mathematical operation outlined when comparing staff-client interaction levels (Jackson and Antonelli, 1978; Berman, 1973).

Self management indicator. The self management indicator observed was the degree to which a client performed or learned to perform social interaction skills or the sanding task components independently of staff prompts (Brickey, 1978; Wasik, 1969; Antonelli and Grace, 1978; Jackson and Antonelli, 1978).

The client performed the components of a target behavior more independently and thus improved his performance when staff-client interaction levels were compared. The components were constant through baseline treatment conditions or pretesting and posttesting procedures. The client performed additional components of the response chain at criteria levels of staff-client interaction when components recorded in baseline and treatment or pretesting and posttesting procedures were compared.

Client performance was maintained when the client performed at the same target behavior component level throughout conditions or tests, or when the client performed these task components at the same level of staff-client interaction throughout conditions or tests.

Performance decreased when the client performed at a task component level which was below baseline or pretest measures, or when the client performed the same task component throughout observation conditions

with greater degrees of staff-client interaction (less independently).

Evaluation design. This project utilized a multiple pretest-baseline (A) design to determine the level of independence at which the 12 subjects performed activity 1 and 2 social interaction skills. The series of pretests (ongoing baseline) (A_2) was continued in the morning for two weeks while treatment methods were implemented in afternoon sessions (B). During the first week of treatment on activity 1 and 2 skills in the afternoon sessions, baseline (A_3) was conducted on sanding skills. Treatment condition with sanding was implemented during the second week after initial baseline. Daily posttest data was obtained during treatment conditions B, B_2, B_3, and C. Posttest data from the third week of the project was compared to baseline pretest means e.g. A to C, A to B_2, and A_3 to B_3. Other comparisons were made utilizing the mean as the mathematical function. See Results and Design Table 4.

Each subject's baseline was compared to his treatment condition mean per skill. The response scores were averaged to provide the average degree of independence or assistance required per activity 1 skills and 2 skills, and on the sanding task.

Insert Table 4 about here

During treatment conditions B_1, B_2, and C the activity 1 and 2 skills were posttested daily prior to practice. Social praise was utilized with edible reinforcers on a continuous schedule during condition B and B_2. Social praise with edible reinforcers was utilized on a fixed ratio two schedule during conditions C and B_3. Fading procedures were utilized to teach social skills and sanding

Skills. Time out procedures were used since they naturally occurred during daily activities. During condition B_3 the sanding task was posttested prior to practice. The a.m. baseline conditions (A_2) and treatment condition B_2 were conducted in the facility activity area where clients normally congregated. Daily treatment conditions B, B_2, and C were conducted in a therapy room located in the basement during the afternoon.

Results and Summary

This project achieved the objective of teaching profoundly retarded persons to self manage more independently on sanding tasks and activity 1 and 2 social skill tasks. All 12 subjects self managed more independently on activity one tasks during the afternoon week 3 posttests, and morning week 4 posttests. On activity 2 tasks, 12 subjects self managed more independently during the afternoon week 3 posttests. On activity two tasks 11 self managed more independently during the morning week 4 posttests and one subject did not improve but was more dependent on staff assistance. Eleven subjects self managed more independently on the sanding task and one subject did not improve but became more dependent on staff assistance during the afternoon week 3 posttests. See figures 1 through 6.

The following comparisons were made for the purpose of identifying each subject's progress toward independent self management after two weeks of treatment on sanding skills, three weeks of treatment on activity 1 and 2 in the afternoon and two weeks of treatment on activity 1 and 2 in the morning.

Afternoon condition: Initial pretest baseline (A) means were

compared to third week posttest means (C). The comparison of activity means reflected the following results: On activity 1, 11 subjects improved (92% functioned more independently). One subject maintained performance at criterion 7.0 level on all 8 skills through all conditions.

On activity 2, 12 subjects improved (100% functioned more independently).

Insert Figure 2 about here

Afternoon condition comparing baseline (A_3) means to week 3 posttest means (B_3) condition. On the standing task, 11 subjects improved (92% functioned more independently). One subject's performance decreased in independence.

Morning condition: Ongoing pretest baseline (A) means were compared to treatment condition B_2 means week 4. Figure 5 compares activity one means reflecting the following results: Eleven subjects performed more independently; one subject maintained performance at criterion 7.0 levels on all eight responses.

Insert Figure 5 about here

Figure 6 compares activity 2 means reflecting the following results: Eleven subjects performed more independently; one subject's performance decreased in independence.

Insert Figure 6 about here

The following comparisons were made for the purpose of identifying trends during p.m. conditions and a.m. conditions.

Afternoon condition: Pretest baseline (A) means were compared to treatment B means. Figure 7 compares activity 1 means reflecting the following results: Eleven subjects performed more independently; one subject maintained performance at criterion levels on all eight responses.

Insert Figure 7 about here

Figure 8 compares activity 2 means reflecting the following results: Seven subjects performed more independently; 2 subjects maintained performance below criterion 7.0 levels and 3 subjects' performance indicated a decrease in independence.

Insert Figure 8 about here

Morning condition: Pretest baseline A means were compared to ongoing pretest baseline (A_2) means. Figure 9 compares activity 1 means reflecting the following results: Eleven subjects performed more independently; 1 subject maintained performance at criterion level of 7.0 on all eight responses.

Insert Figure 9 about here

Figure 10 compares activity 2 means reflecting the following results: Eleven subjects performed more independently and one subject decreased in independence.

Insert Figure 10 about here

The a.m. ongoing baseline (A_2) means were compared to a.m. treatment condition (B_2) means. The comparison of activity means reflected the following results: On activity 1, 7 subjects improved (58% functioned more independently); 3 subjects maintained functioning at criterion 7.0 levels on all 8 responses; 2 subjects' performances decreased. See Figure 11.

Insert Figure 11 about here

On activity 2 seven subjects improved (58% functioned more independently); 2 subjects maintained functioning at criterion 7.0 levels in all 8 responses; 3 subjects' performances decreased in independence. See Figure 12.

Insert Figure 12 about here

The following comparisons were made for the purpose of identifying trends across a.m. and p.m. conditions.

Morning to afternoon: Comparing ongoing pretest baseline week 1 (A_2) means to treatment condition(B) week 1 means. The comparison of activity 1 means reflected the following results: Five subjects performed more independently during the (B) afternoon condition. Two subjects performed more independently during the (A_2) morning session. Five subjects' performances were the same or maintained across both conditions.

The comparison of activity two means reflected the following results: One subject performed more independently during the (B) afternoon condition and 9 subjects performed more independently in the A_2 morning session. Two subjects' performance was the same or maintained across both conditions at criterion 7.0 level on all eight responses.

Morning to afternoon: Comparing ongoing pretest baseline week 2 (A_2) means to treatment condition (C) week 2 means. The comparison of activity 1 means reflected the following results: Four subjects performed more independently during afternoon (C) condition and 3 subjects performed more independently during the morning A_2 condition. Five subjects' performance was the same or maintained across both conditions at criterion 7.0 on all eight responses.

The comparison of activity 2 means reflected the following results: Six subjects performed more independently during the afternoon (C) condition. Two subjects performed more independently in the morning A_2 condition. Four subjects performance was the same or maintained across both conditions.

Reliability

Two reliability sessions were conducted during training conditions (week 3) and percent agreement ranged from .92 to 1.00. Two reliability sessions were conducted during baseline sessions and ranged from .94 to .96% agreement. Reliability was determined by the percent agreement between two observers rating the same behaviors of individual clients simultaneously.

Summary

The results indicated that when week one baseline (A_2) data and

treatment (B) data were compared to condition A data. The improvement trends were similar. When week one data collected during baseline A_2 and treatment B were compared subject performance differed between conditions in respect to improvement trends on activity 1 tasks and activity 2 tasks. When the same comparison (Baseline A_2 to treatment C) was made during week two this difference (a greater improvement trend on activity two tasks) was observed to occur in the afternoon rather than in the morning. Individual clients appeared to learn skills during ongoing baseline conditions as well as during afternoon treatment conditions at the same level of independence during both conditions. Some subjects who were improving during baseline week 1 conditions improved at a greater degree during the treatment condition while other individuals improved at a greater degree during the ongoing baseline session when compared to treatment conditions. The performance variations between the ongoing baseline A_2 and concurrent treatment B and C on activity 1 and 2 skills may be a function of treatment procedures, variables in the morning sessions which were conducted in the clients' daily activity area, baseline variables, and generalization within conditions and across conditions.

Another comparison was included in which a.m. baseline averages (A_2) were compared to a.m. treatment condition averages (B_2). These results were less dramatic. Subject #2 required greater degrees of assistance in activity 1 and 2 tasks possibly due to medications, evaluations, and/or self injurious behavior during the a.m. condition. Subject #12 was sick during week 3 and did not perform as well during the morning condition. Subject #6 had maintained performance through a.m. baseline but required prompting during week 3 on one activity 2 task.

The results indicate that an individual's self management skills can be measured utilizing the criteria specified in Table 1 within a variety of situations and across a variety of social skill tasks and the vocational task.

PROJECT 2

Method

Subjects

The 47 subjects participating in this study were profoundly retarded males and females with IQ's which ranged from 04 to 24 as measured by standardized intelligence tests. The mean IQ was 14. All subjects are residents of a state operated mental health facility and had not participated in a data based program outside of their living area before. During the present study they walked to the vocational services class from their living area. One client identified as having an IQ of 27 participated in this study (Antonelli, Olson, Hester, and Travis, 1978).

Procedure

Methods and techniques for structuring the group sessions are discussed as follows:

Seating arrangement. Circular tables with defined client work spaces which resulted in clients facing the therapist when he was positioned in the center of the table. Proximity of client to therapist was from four to five feet. This seating arrangement was utilized so that a) the clients and therapist would have the opportunity to observe each other, and b) the therapist could interact more efficiently with clients (Zimmerman, Zimmerman, and Russel, 1969).

Sessions. Therapy sessions during pretests, posttests or treatment conditions were 45 minutes in duration. Four groups were conducted in the morning and four groups were conducted in the afternoon. The therapist was held constant on four groups and was varied on four groups.

Rehearsal or practice. Same procedure as stated in Project 1 in text.

Guided rehearsal with cadence count. Same procedure as stated in Project 1 of text.

Reinforcement schedules. Same general reinforcement procedures were utilized as stated in project 1 of text. Social praise was utilized during the pretest and social praise with edibles were utilized as reinforcers during the treatment condition. Reinforcement schedules were attenuated during treatment conditions. During this study groups were on continuous reinforcement schedules for the first 2 weeks of treatment and then the schedule was changed to a fixed ratio two reinforcement schedule.

Staff-client interaction rating scale. Same procedure as stated in project 1 in text.

Fading with graduated guidance. Same procedure as stated in project 1 in text.

Presentation of social skill tasks and sanding tasks. Same procedure as stated in project 1 in text.

Timeout from group activities. Same procedure as stated in project 1 in text.

Subject grouping. Subjects were randomly assigned to groups of six clients utilizing a lottery selection method of drawing names. One group only had 5 members.

Data collection. Same procedure as in project 1 in text.

Data analysis. Same procedure as in project 1 in text.

Self management indicator. Same procedure as in project 1 in text.

Evaluation design. This project utilized a pretest/posttest design. Due to the degree of disruptive behavior during the first day of baseline, reinforcement schedules were implemented on the second day after pretests. Daily posttest data was collected during treatment. Comparisons were made utilizing data from the following conditions:

1. Initial pretest means to eight week posttest means. Each subject's pretest mean was compared to posttest means per skill. The response scores were averaged to provide the average degree of independence or assistance required per activity 1 skills, activity 2 skills, and on the sanding task. During the pretest activity 1 and 2 skills and sanding skills were pretested. Social praise was provided because it was a consequence observed during daily activities. Timeout procedure was used since it naturally occurred during daily activities.

During treatment condition the social and sanding skill was posttested daily prior to practice. Social praise was utilized with edible reinforcers. Fading procedures were utilized to teach social skills and sanding skills. Guided rehearsal was utilized to teach sanding skills. Time out procedures were used since they naturally occurred during daily activities.

Results and Summary

This project achieved the objective of teaching profoundly retarded persons to self manage more independently on sanding tasks and activity 1 and 2 social skill tasks. The following comparisons

were made for the purpose of identifying each subjects progress toward independent self management after eight weeks of treatment on activity 1 and 2 social skill tasks and the sanding task.

Pretest scores were compared to the eighth week posttest score mean. On activity 1, 37 subjects' performances improved (79% functioned more independently). Two subjects' performance was maintained below 7.0 criterion levels. Eight subjects' performance decreased. See Figure 13.

Insert Figure 13 about here

On activity 2, 40 subjects' performance improved (85% functioned more independently). One subject's performance was maintained below 7.0 criterion levels. Six subjects' performance decreased. See figure 14.

Insert Figure 14 about here

On the sanding skill, 43 subjects' performances improved (92% functioned more independently). Four subjects' performances decreased. See figure 15.

Insert Figure 15 about here

Reliability

Reliability sessions were conducted during this project for the purposes of staff training and verification of therapist observations. Reliability sessions conducted with trained therapists ranged from .95 to 1.00% agreement between two observers rating the same behavior of clients simultaneously. Four reliability sessions were conducted

during pretest and over 10 were conducted during treatment condition weeks 1, 2, 3, 5, 6, and 8.

Summary

Occasionally during this project tours and visitors from other work sites walked through the therapy area and at times stopped and briefly observed the project. These visits did not appear to interfere with the results presented in this study.

The results suggest that subjects who were assigned to groups on which the therapist was held constant learned to self manage at a greater degree of independence on activity 1 and 2 tasks and the sanding tasks. The clients who did not improve or who performed at a lower average than pretest average appeared to do so due to problems involving medications, illness, and failure of the therapist to identify reinforcers.

The results indicate that an individuals self management skills can be measured utilizing the criteria specified in Table 1 within a variety of social skill tasks and the vocational task.

Discussion

The present study demonstrated that clients with limited self care skills, social interaction skills, and verbal skills could benefit from small group therapy. The study demonstrated that the subjects learned to respond to abbreviated and multi-word instructions at increased levels of independence. The data in this report does not isolate the instruction characteristics to which the client was responding. For example when the instruction "stand" was presented some clients would attempt to sand when sanding materials were present. The same

clients would respond to the instruction "stand up".

Berman (1973), Diebert and Harmon (1973). Cronin(1977), and Michaelis (1978), indicate that the following considerations must be observed when working with severely and profoundly retarded persons.

1. Does the person understand the language?

2. Has the person had the opportunity to learn what specific instructions mean?

3. Are medical or physical variables interfering with the person?

4. What characteristics of specific instructions or instructors do individual persons respond to?

The present study provides a basis for investigating some of these questions but as a group the majority of the clients learned to follow instructions and interact socially with each other and with the therapist, and perform the sanding task.

The purpose of both projects was to investigate if groups of profoundly retarded clients could participate in a vocational training program. Of great concern to facility staff were the following:

1. Would the clients learn to follow instructions and interact in socially acceptable manners?

2. Would the clients stay in class?

3. Would the clients engage in various disruptive behaviors e.g. breaking windows, as they did in their living area?

Project 1 group sessions were conducted 4 days per week and project 1 group sessions were conducted five days per week. During the study no windows were broken, timeout procedures were implemented for behaviors of inappropriately leaving class, throwing objects,

hitting or slapping others, and floor sitting. Some clients responded to one session of time out while others required more than one.

The benefits of group therapy and individualized therapy have been investigated by Favell, Favell, and McGimsey (1978) and Storm and Willis (1978). Favell et.al. (1978) demonstrated that group instruction with severely retarded persons resulted in more rapid learning rates when compared to individualized training programs. Storm and Willis (1978) indicated in their study that group programs provided clients with four times as much client activity as did individualized training programs. Antonelli (1974) demonstrated that one therapist could teach a variety of self care, hygiene, social, recreational, motor, vocational, and language skills utilizing a group approach. Group sizes ranged from six clients to eighteen clients with the average group size ranging from ten to twelve clients (Congdon, 1974; Jackson and Antonelli, 1978). The group therapy approach appears to be justified due to economical trends, utilisation of staff time, accreditation standards, as well as the social learning or observational learning opportunities provided to group participants (Favell, et.al. 1978; Storm and Willis, 1978; Antonelli, 1974; Antonelli, et.al., 1978; Zimmerman, et.al., 1969; Congdon, 1974).

The present study described a series of methods and techniques which can be applied to structure group therapy programs for the profoundly retarded population. A data system is also described which provides a basis for program evaluation, and for measuring and describing the degree of self management of clients in performing daily activities as well as in training settings (Jackson and Antonelli, 1978).

The data system provides staff with a coded recording approach which facilitates a) recording observations of client behavior daily, b) immediate data collection during therapy sessions, and c) reliability studies which can be conducted as needed to evaluate client performance as well as therapist skills in data recording and behavior observation. This data system provides an emperical basis for rating clients utilising adaptive behavior assessment instruments and is designed to provide a response to the following questions which are commonly asked in client progress reviews.

1. How independently and consistently can the client perform skills?

2. How much of a skill or task can the client perform without assistance?

3. What kinds of assistance does the client require to perform tasks or behave in an acceptable manner (Antonelli, et.al., 1978; Berman, 1973; Joint Commission on Accreditation of Hospitals, 1978)?

The degree to which a client will perform a task without staff prompts reflects the degree to which a client is self managing his behavior within the ongoing environmental antecedent and consequence conditions (Brickey, 1978; Wasik, 1969).

The results of both projects provide the following comparisons when initial pretests and baselines are compared. The subjects who lived at the community facility performed more components of the sanding task during baseline than the subjects who lived at the state operated facility, when groups of equal size were compared. This effect might be explained by the lack of stimulation which

institutions traditionally provide on the trend toward lower functioning clients in residential facilities (Robinson and Robinson, 1976; Congdon, 1974).

The issue of therapy for profoundly retarded persons has been discussed by Robinson and Robinson (1976), Congdon (1974), the Joint Commission on Accreditation for Hospitals (1978), Berkson and Dwyer (1977), Karen et.al. (1977), and Cronin (1977) within socio-economical, philosophical, humanitarian, and legal concepts. The present study describes a series of techniques which have been utilized to provide the opportunity for profoundly retarded persons to learn social skills and a vocational task. The results indicate that profoundly retarded persons learned to self manage more independently in responding to requests and instructions as well as in performing a vocational task. The results further indicate that further research is indicated to develop methods for teaching skills to this population and increasing the self management skills of the profoundly retarded person.

The results demonstrated by the projects discussed in this study were socially significant to the point that both projects are currently permanent components of the program delivery systems at the facilities in which they were conducted.

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Table 1

Staff-Client Interaction Level Criterion

Nine Point Rating Scale

Always provide the client with the opportunity to perform at his most independent level. Begin at level 9; if the client does not perform, go to level 8; if the client does not perform, go to Level 7.., etc., until the client performs the task.

9. Self-initiates task (completes task):

   The client will obtain task materials and initiate task, complete task, and put materials away without any assistance specified in 2 through 8.

8. Completes task with trainer proximity:

   The client will be rated 8 under the following condition:

   a. The client will perform the task completely after task materials are presented. The trainer is present in the training area but does not interact with assistance levels 2 through 7. The client will not respond to assistance level 9.

7. Completes task when verbal instructions are given prior to task:

   The client will be rated 7 under the following condition:

   a. The client will perform the task completely after being instructed to perform the task. The client will not require physical prompts, demonstrations or models, gestures or any additional verbal prompts after the initial verbal instruction. The client will not respond to assistance levels 8 through 9.

6. Completes task with verbal instructions and trainer proximity:

The client will be rated 6 under the following conditions:

a. The client will perform the task while receiving verbal prompts on the complete task or on specific components of the task. No physical contacts or prompts are required. No models or demonstrations are required. No gestures--pointing, eye shifting, arm gestures or head nodding. The client has not responded to assistance levels 7 through 9.

5. Completes task with verbal instruction and gestural prompt:

The client will be rated 5 under the following conditions:

a. The client will perform the task requiring verbal prompts and gestures on the complete task or on specific components of the task.

b. Gestures are defined as pointing, arm gestures, head nodding, eye shifting. No physical contacts or prompts are required. No models or demonstrations are required. The client has not responded to assistance levels 6 through 9.

4. Completes task with modeling demonstration and verbal instructions:

The client will be rated 4 under the following conditions:

a. The client will perform the task after a modeling demonstration and verbal instructions are given and may require further demonstration on any part of the task. No physical assistance is required. The client has not responded to assistance levels 5 through 9.

3. Completes task with intermittent physical assistance:

The client will be rated 3 under the following conditions:

a. The client will perform at least one component of the task not requiring complete manual guidance.

b. The client will perform at least one component of the task not requiring continual physical contact. The client has not responded to assistance levels 4 through 9.

2. Completes task with continuous physical assistance:

The client will be rated 2 under the following conditions:

a. The client will perform the task from initiation to completion only if he is manually guided to perform all components of the task.

b. The client will perform the task from initiation to completion only if physical contact is made continually from beginning of task to completion. This physical contact may not be related to performance on components but may be resting a hand on the client's shoulder. The client has not responded to assistance levels 3 through 9.

1. Fails to complete task:

The client will be rated 1 under the following condition:

a. The client does not perform any components of the task. Does not perform task even when complete manual guidance is provided. The client has not responded to assistance levels 2 through 9.

TABLE 2

Social Interaction Skills

Instructions to therapist. State the client's name prior to giving instructions. Change the order in which you present the steps; (Do not always begin with step 1.) when instructing the client to come to you, stand in different locations in your training site. Begin activity with clients seated at the table. *Step 4 of Activity I—Put the edible on the table top in front of the client.

Activity I (Basic)	Client
1. Touch my (therapist's) hand.	1. Touches therapist's hand.
2. Touch the table.	2. Touches table.
3. Touch the chair.	3. Touches chair.
*4 Pick up the (reinforcer or candy).	4. Picks up edible.
5. Stand.	5. Stands up.
6. Sit.	6. Sits in chair.
7. Come to me.	7. Walks or wheels chair to therapist.
8. Touch the ____(object).	8. Extends hand and touches object.

TABLE 2

Social Interaction Skills

Activity II (Compliance)	Client
1. Stand up.	1. Stands up.
2. Come here.	2. Walks or wheels chair to therapist.
3. Go to the ____ (table, etc.).	3. Walks or wheels chair to location.
4. Sit down.	4. Sits in chair.
5. Pass the (object) to ____ (Client's name).	5. Obtains and passes item.
6. Give the ____ to me (therapist).	6. Obtains and gives item to therapist.
7. Go to the ____ and pick up the ____ (object).	7. Walks to location and picks up object.
8. Line up and go to ____ (living unit, etc.).	8. Lines up with group.

Sanding Skill

Target behavior: Client will upon instruction obtain sandpaper and wood and sand the wood with a back and forward sliding motion of the sandpaper over the wood.

Equipment: Sandpaper, wood, participant, reinforcers.

R-1 Client obtains or is presented with sandpaper and wood.

R-2 Client picks up sandpaper in one hand.

R-3 Client holds wood stable with other hand.

R-4 Client places grain of sandpaper against wood.

R-5 Client slides in a backward and forward motion, the sandpaper against the wood (sanding).

R-6 Client puts material away.

Table 3

Data Sheet and Data Collection

	Date: 1	2	3	4	5
Activity 1 Task steps					
1	?				
2	?				
3	?				
4	?				
5	?				
6	?				
7	?				
8	?				
Activity 2 Task steps					
1	?				
2	?				
3	?				
4	?				
5	?				
6	?				
7	?				
8	?				
Sanding Task Data	2/3				

Subjects Name: _____

Month/Year: _____

During each session the data which was recorded consisted of:

1) The degree of assistance (as defined in table 1) which the subject required to perform each activity 1 and 2 step or task.

2) Sanding task data required that two numbers be recorded. The first number (2/) recorded was the degree of assistance. The second number (/3) recorded was the task step on which the subject required additional assistance as defined by table 1 criteria 6 through 1. The score (2/3) indicates the subject performed steps 1 and 2 at criterion levels, but that he completed step 3 only when constant physical assistance was provided.

Table 4

Project 1

3 Days	Week 1	Week 2	Week 3	Week 4
Multiple Behavior Pre-test Baseline on Activity 1 and 2. (A) Groups 1,2, and 3.	A.M. Condition (A_2) On going Baseline on Activity 1 and 2 tasks.		Condition (B_2) Treatment on Activity 1 and 2 tasks.	
	Group 1 P.M. Condition (B) Treatment on Activity 1 and 2 tasks.	Condition (C) Treatment on Activity 1 and 2 Tasks.		
	Group 2 P.M. Condition (A_3) Baseline on the Sanding task.	Condition (B_3) Treatment on the Sanding task.		
	Group 3 P.M.			

Conditions (B, and B_2)--Continuous reinforcement schedule (social praise with edible).

Conditions (B_3 and C)--Fixed-ratio two reinforcement schedule (social praise with edible).

Figure 1. Initial pre-test baseline (A) means compared to third week post-test means condition (C), Activity 1.

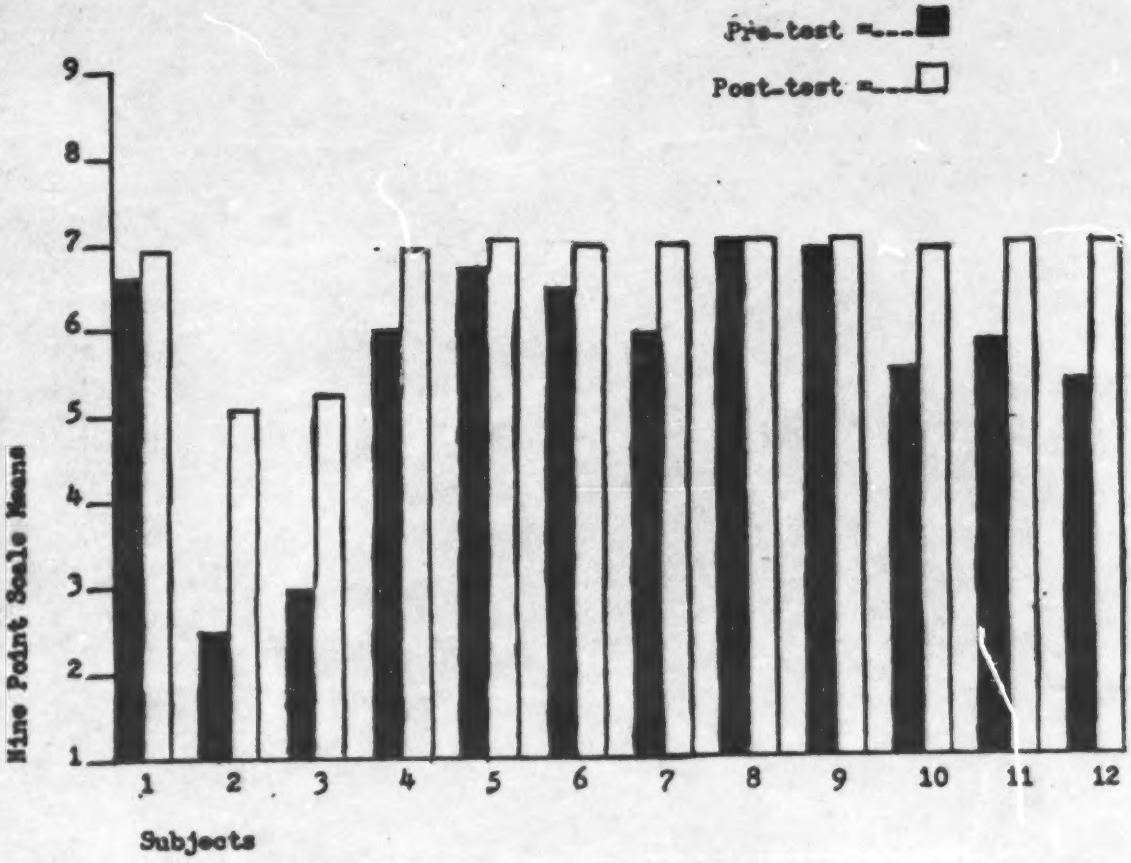


Figure 2. Initial pre-test baseline (A) means compared to third week post-test means condition (C), Activity 2.

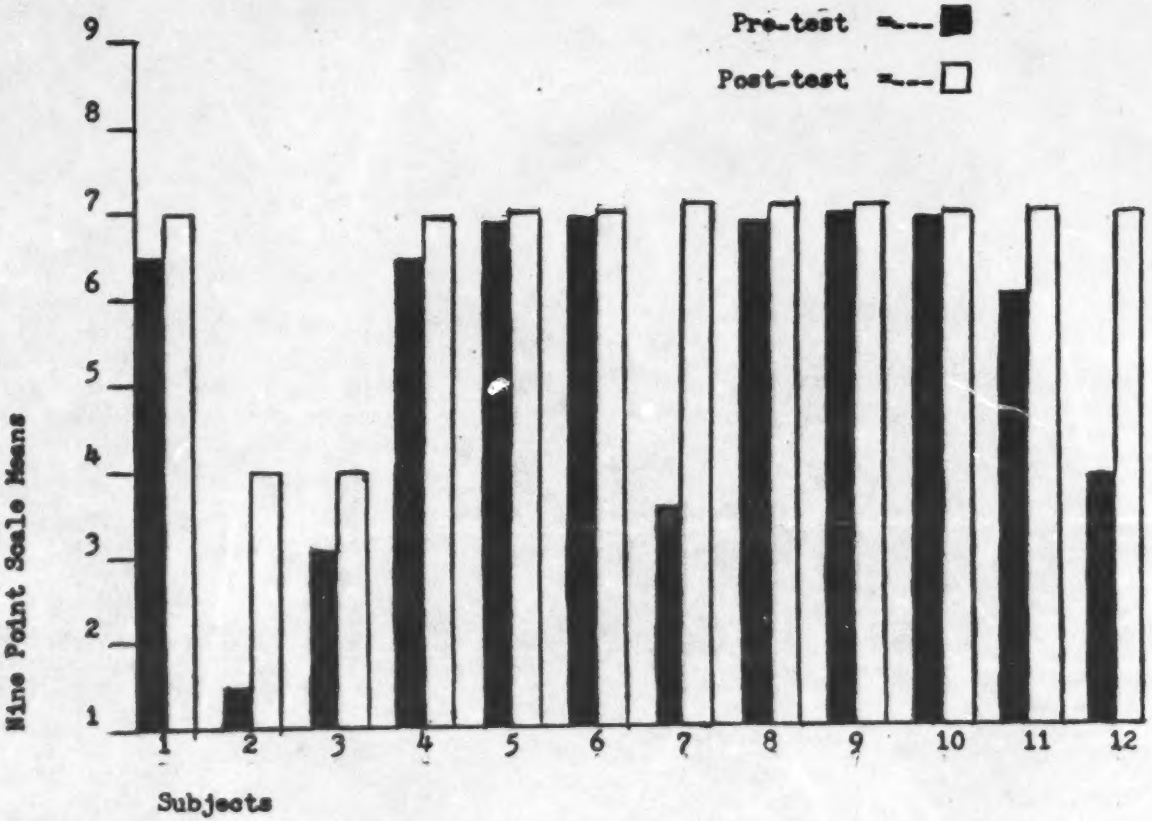


Figure 3. Baseline (A3) means compared to week three post-test means condition (B3), Sanding Task.

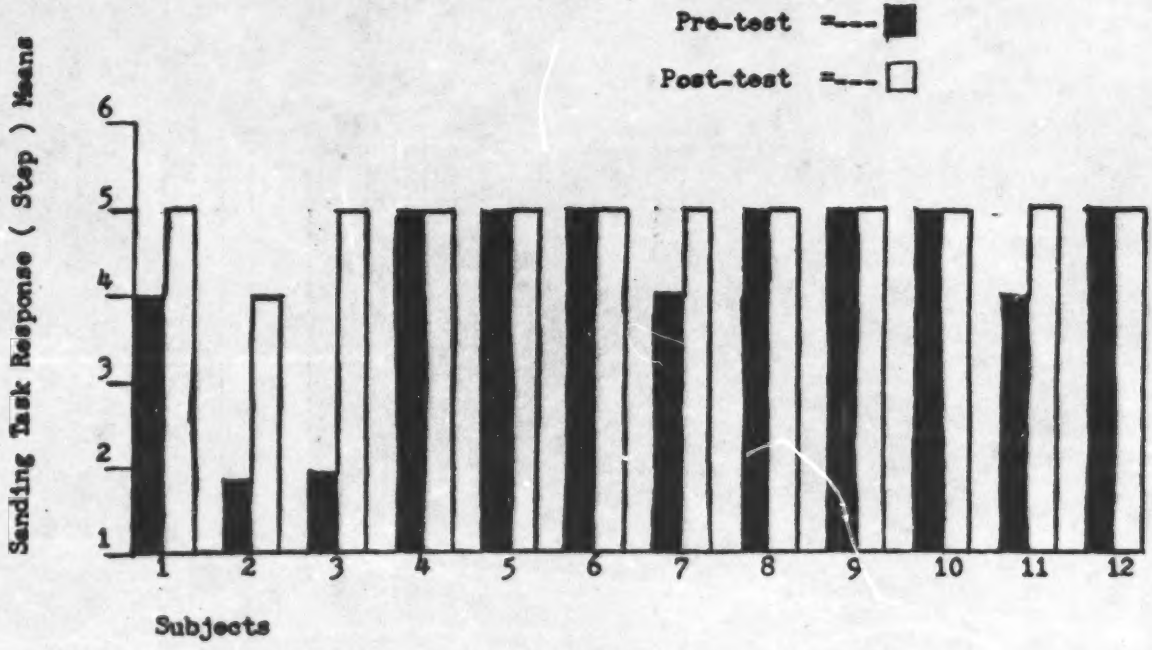


Figure 4. Baseline (A3) means compared to week three post-test means condition (B3), Sanding Task.

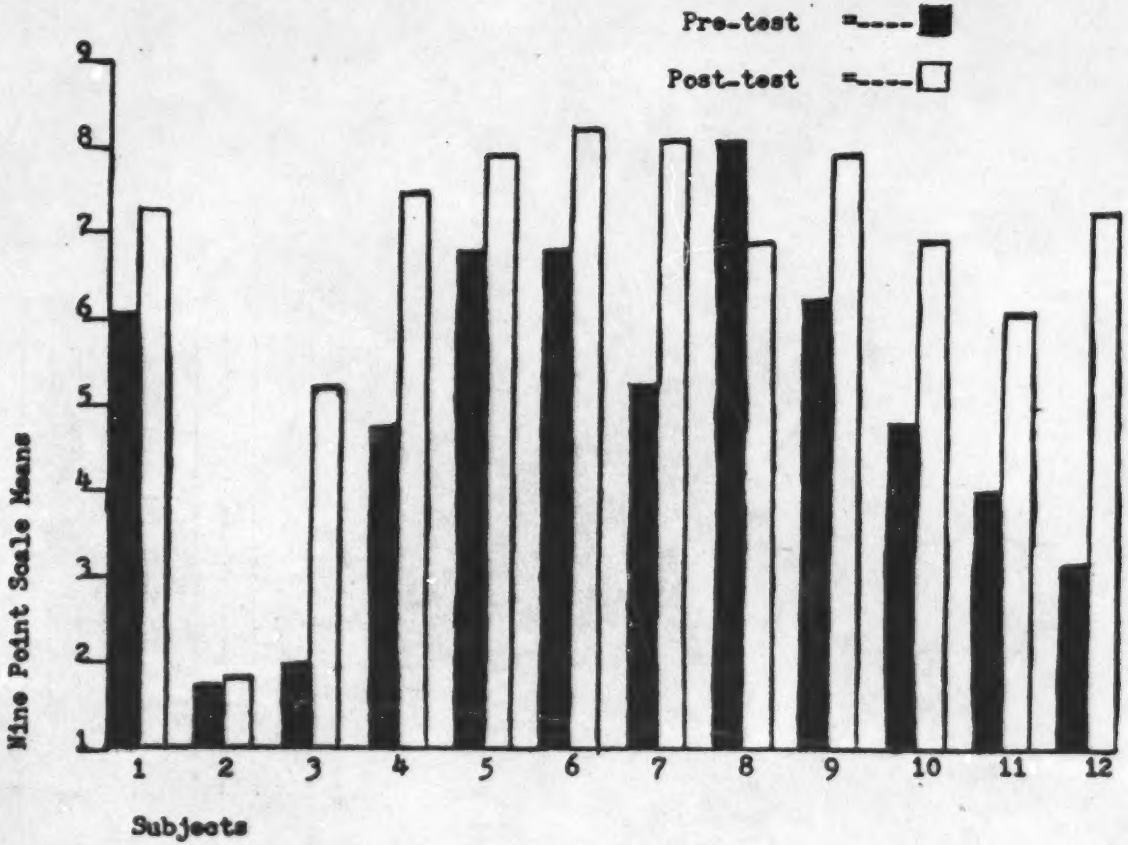


Figure 5. Multiple pre-test baseline (A) means compared to week four means condition (B2), Activity 1.

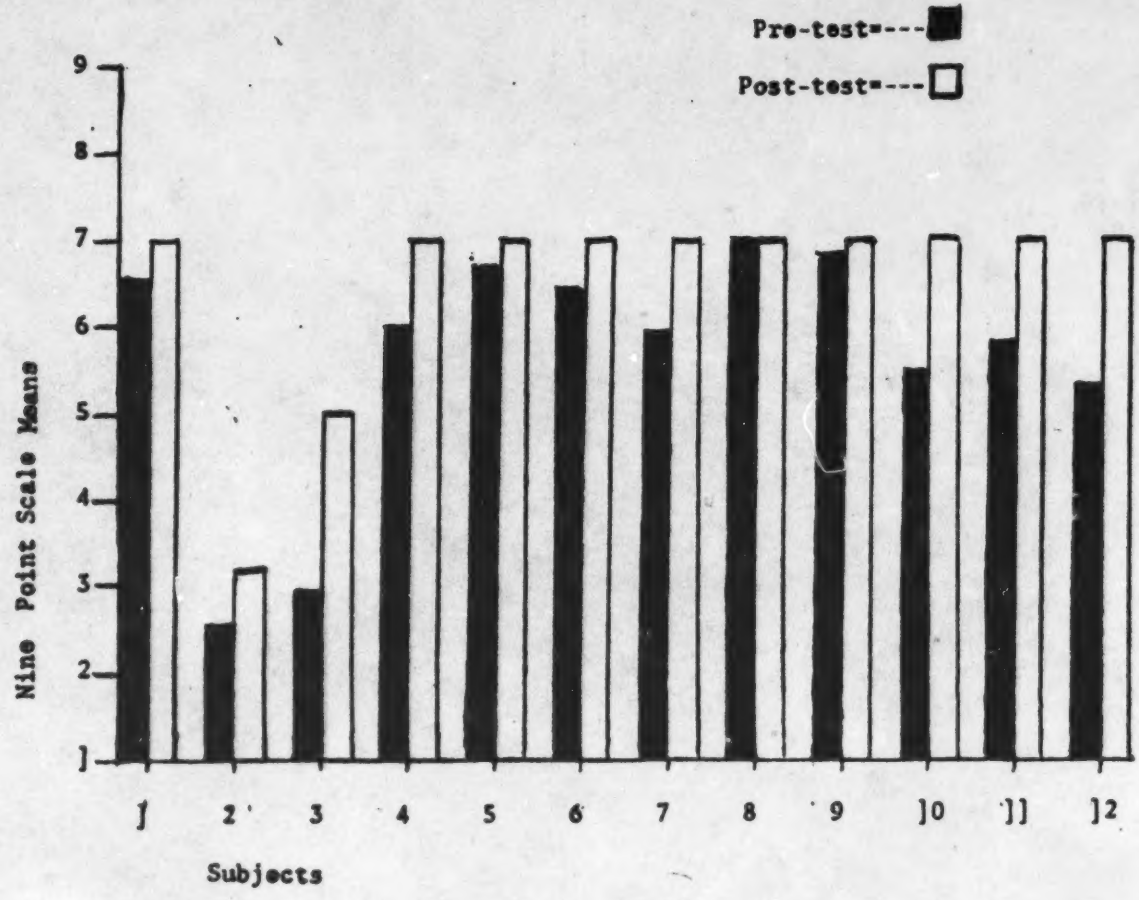


Figure 6. Multiple pre-test baseline (A) means compared to week four means condition (B2), Activity 2.

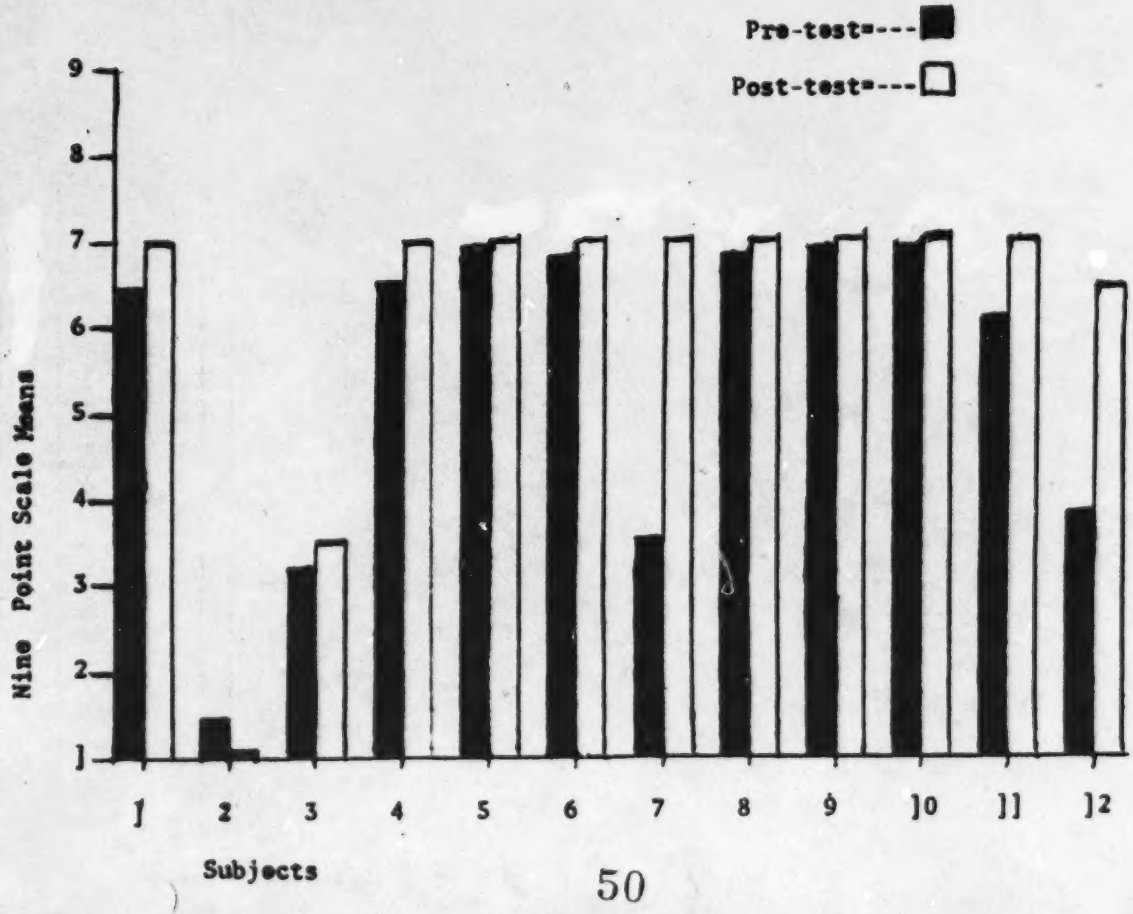


Figure 7. Multiple pre-test baseline (A) means compared to treatment condition (B) means, Activity 1.

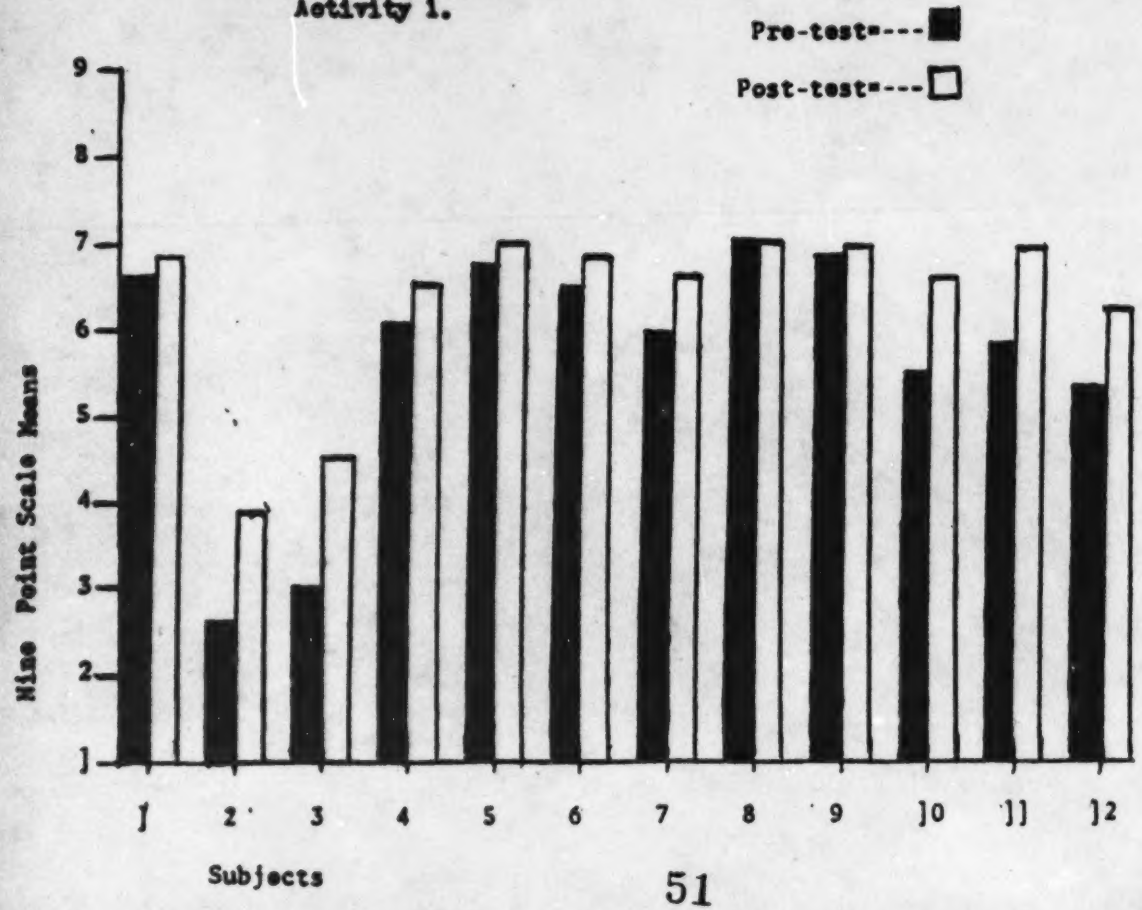


Figure 8. Multiple pre-test baseline (A) means compared to treatment condition (B) means, Activity 2.

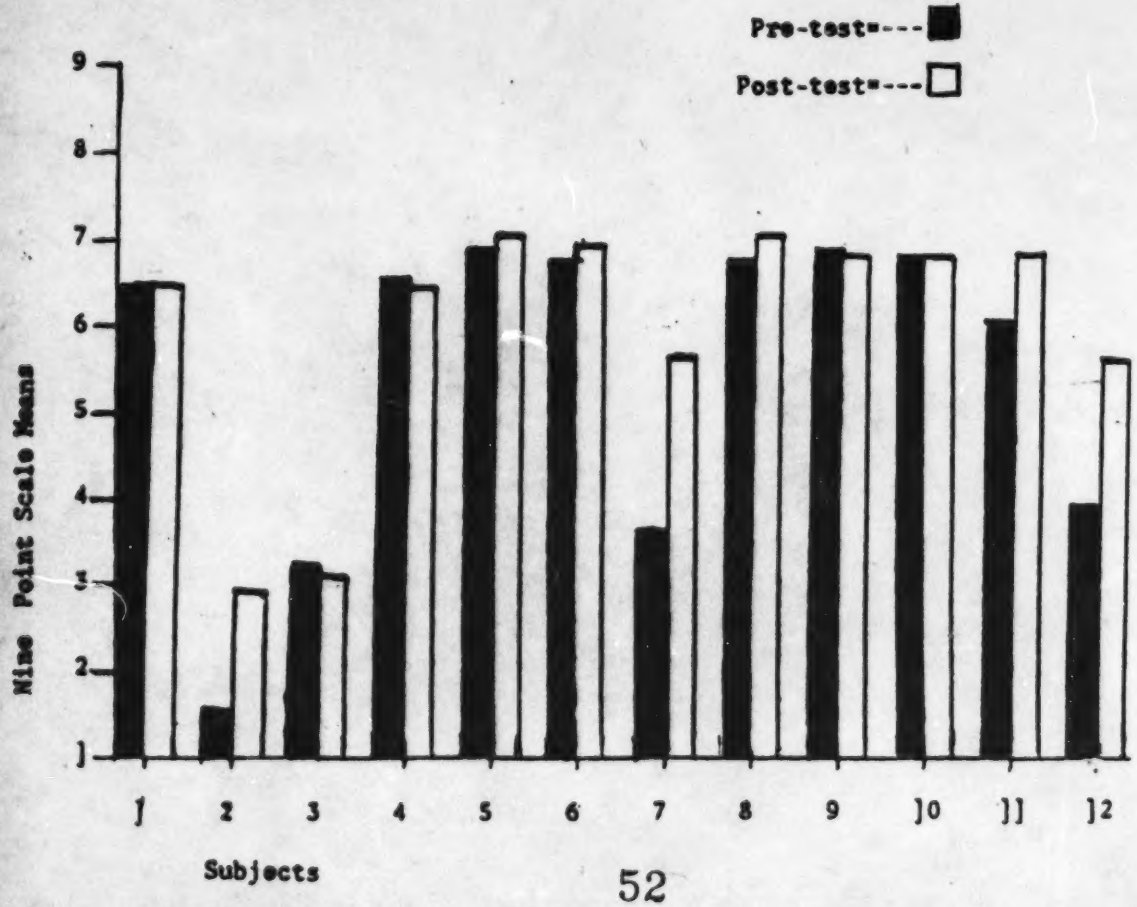


Figure 9. Multiple pre-test baseline (A) means compared to ongoing pretest baseline (A2) means, Activity 1.

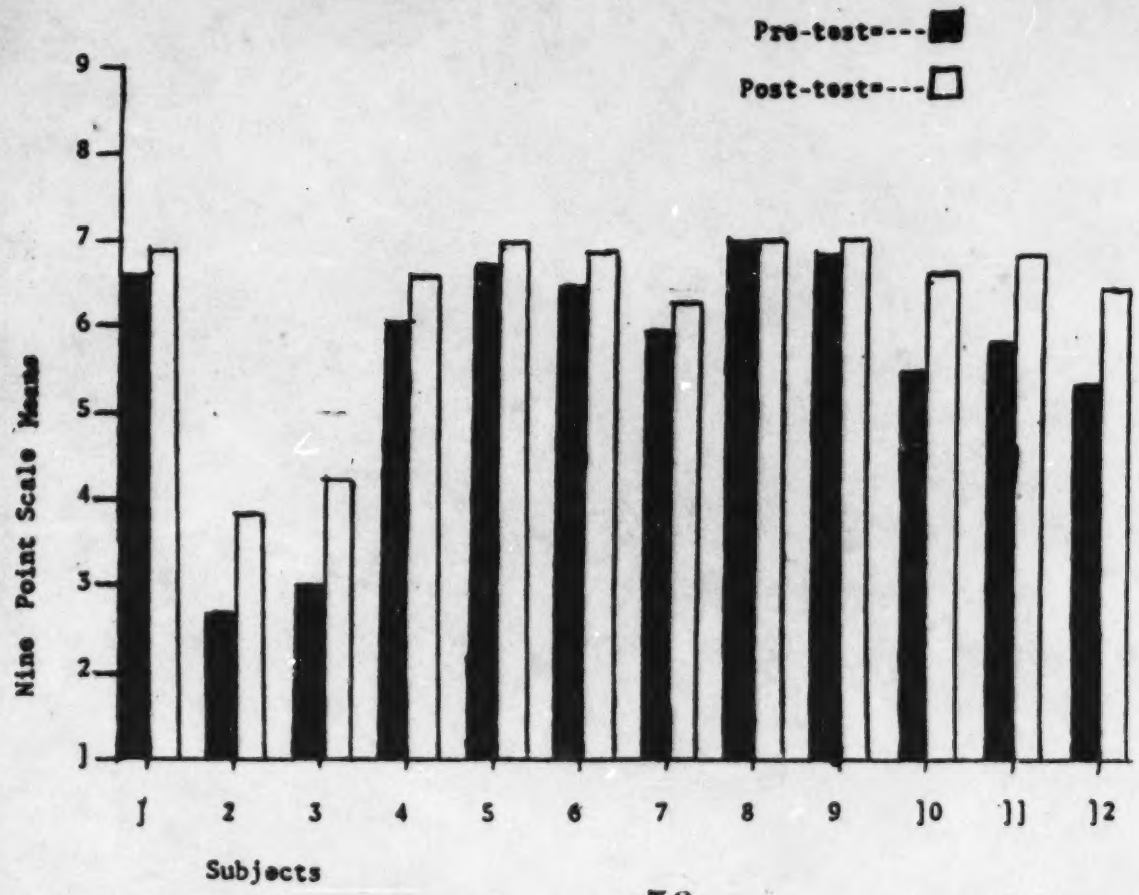


Figure 10. Multiple pre-test baseline (A) means compared to ongoing pretest baseline (A2) means, Activity 2.

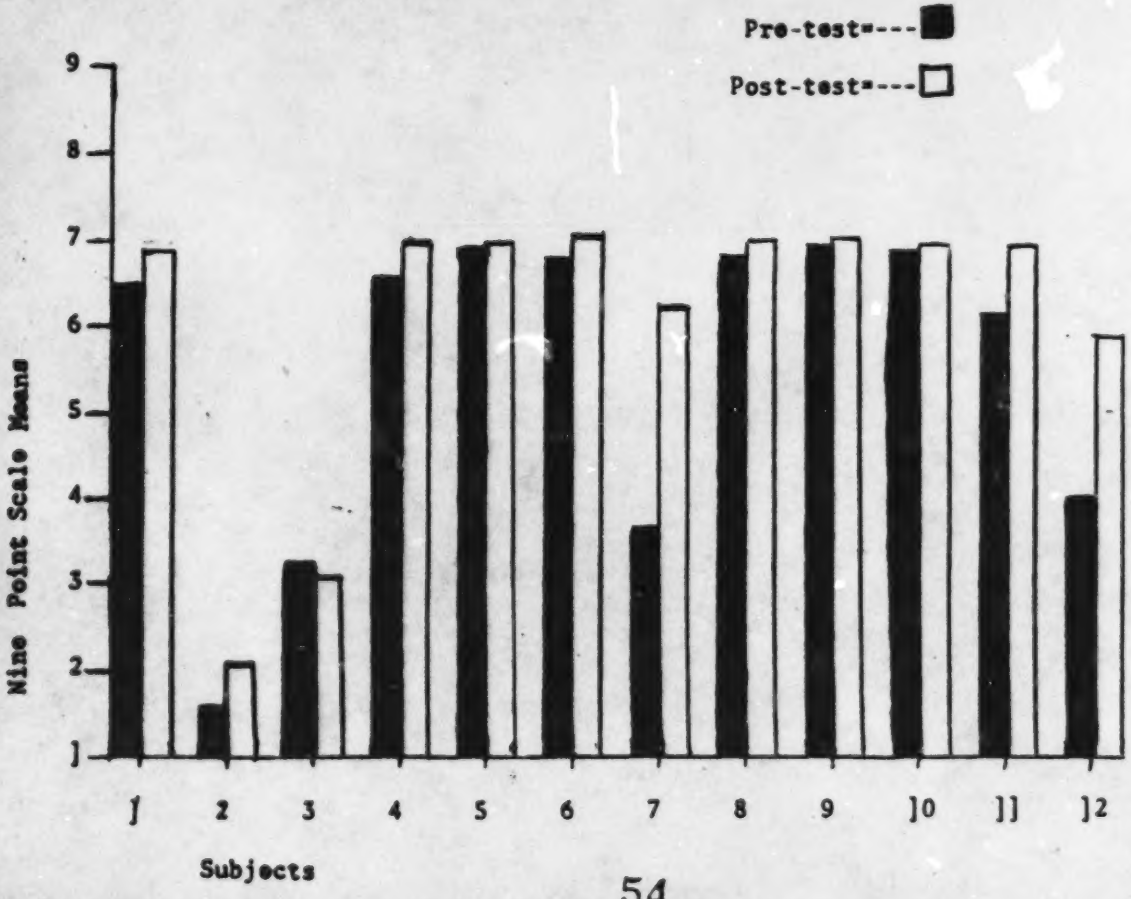


Figure 11. Ongoing baseline (A2) means compared to treatment condition (B2) means, Activity 1.

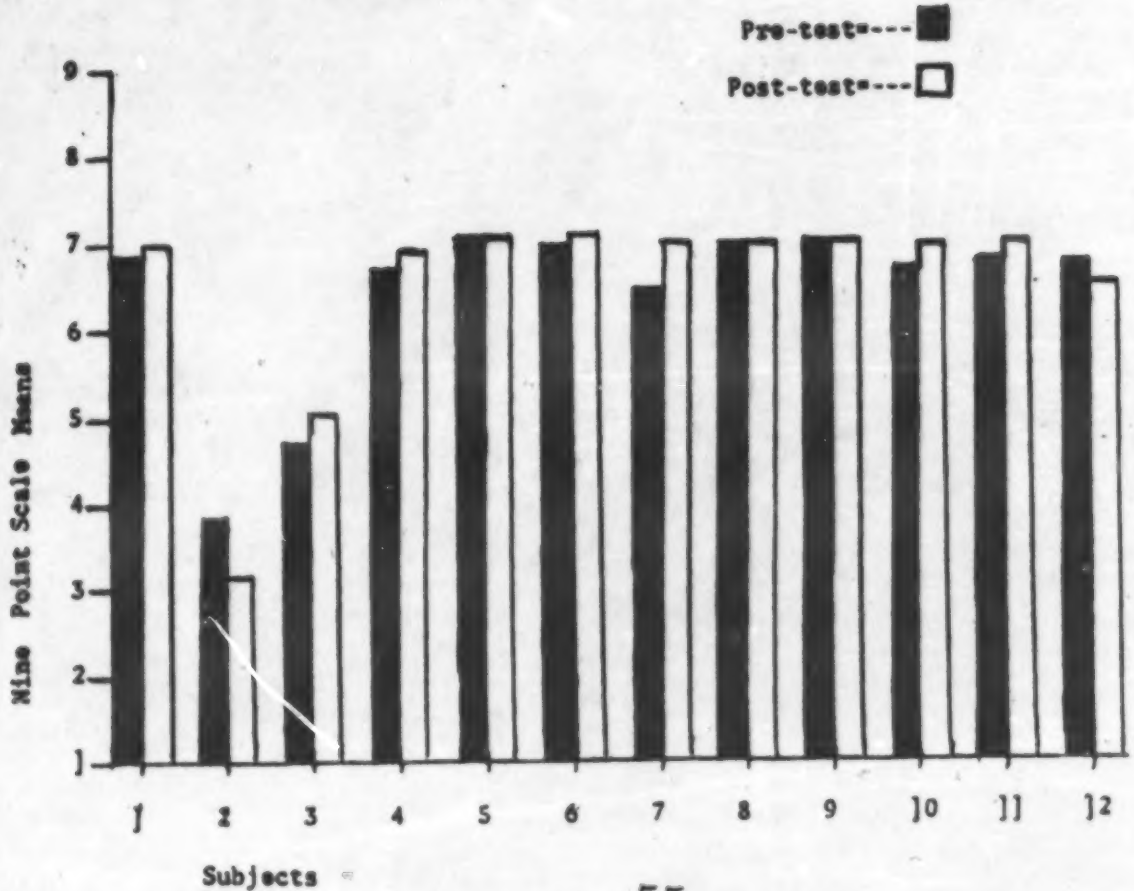


Figure 12. Ongoing baseline (A2) means compared to treatment condition (B2) means, Activity 2.

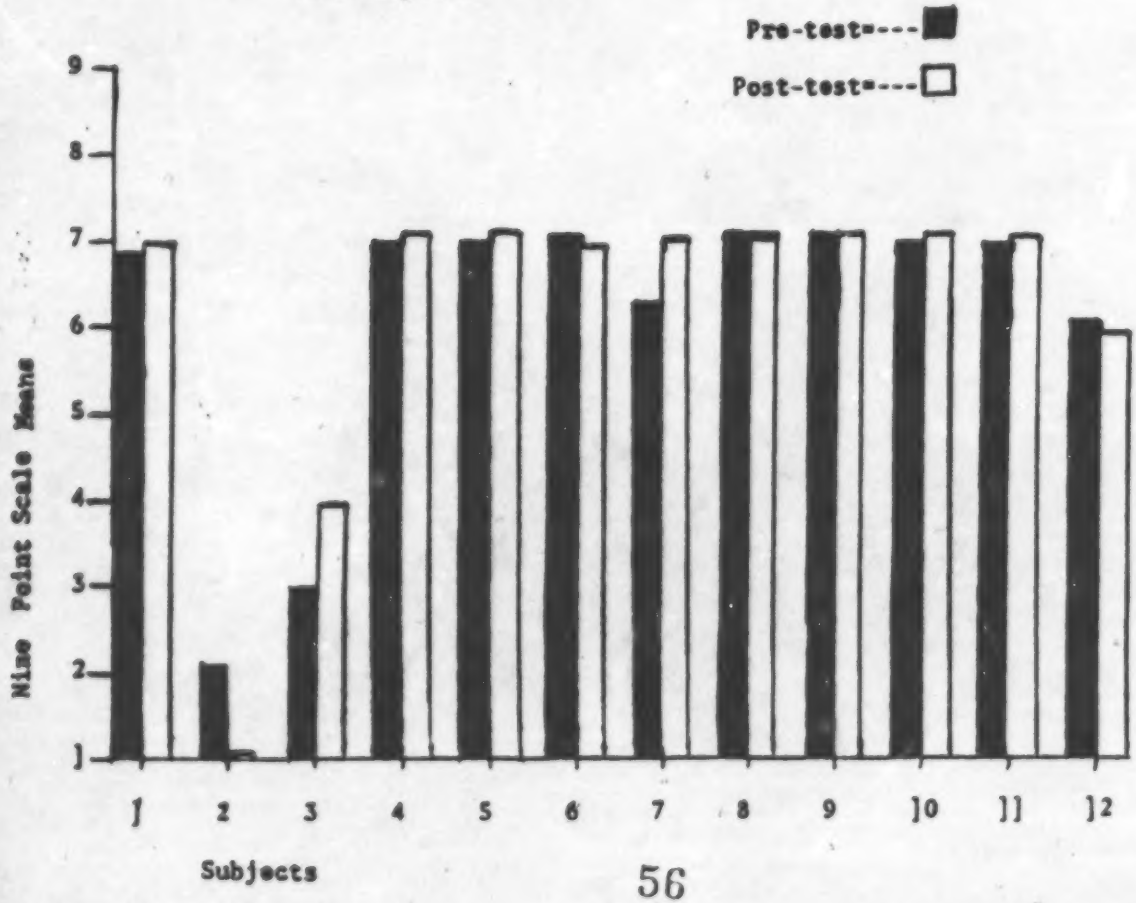


Figure 13. Morning groups Activity 1 pre-test/post-test comparison.

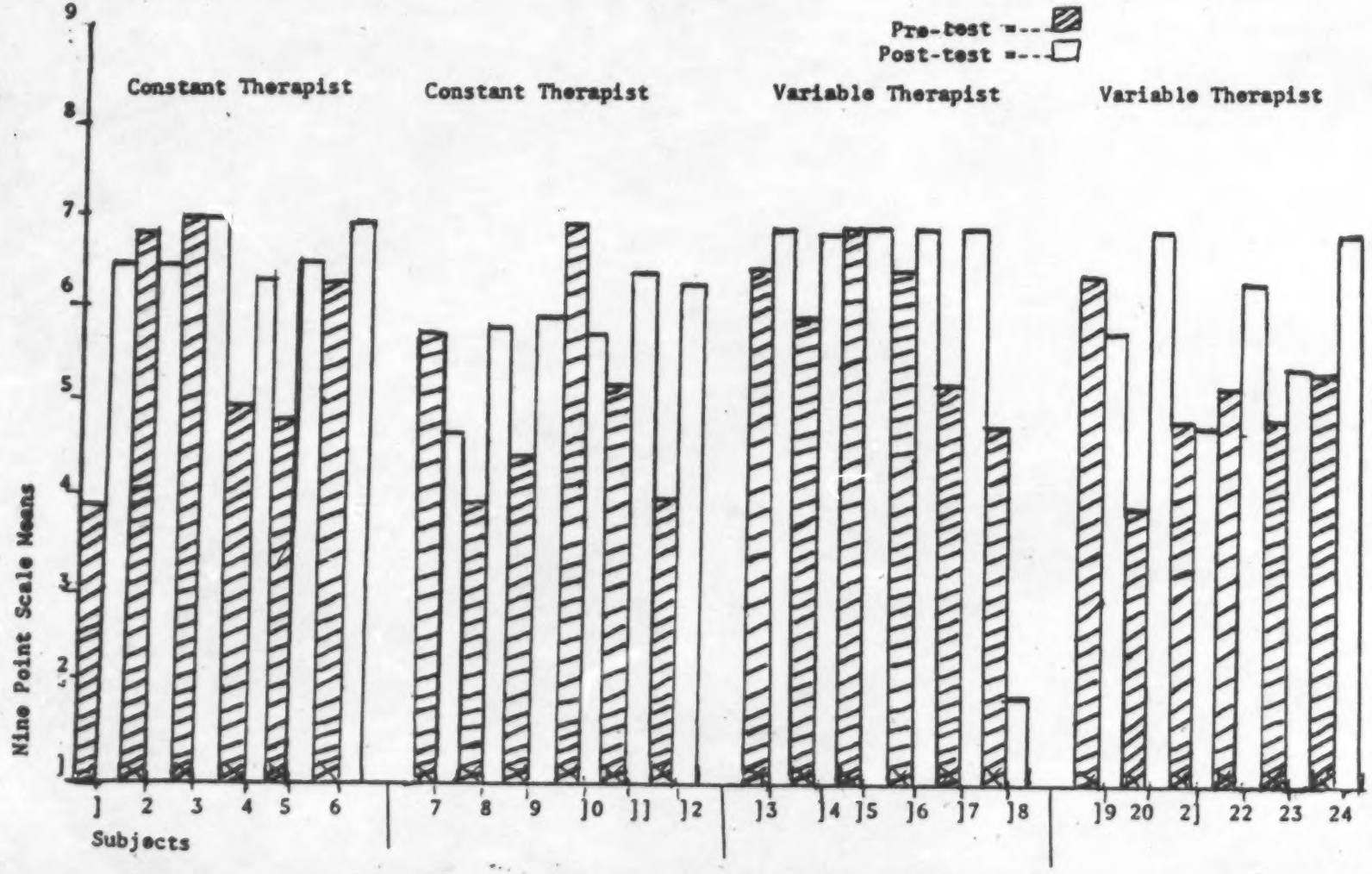


Figure 13. Afternoon groups Activity 1 pre-test/post-test comparison.

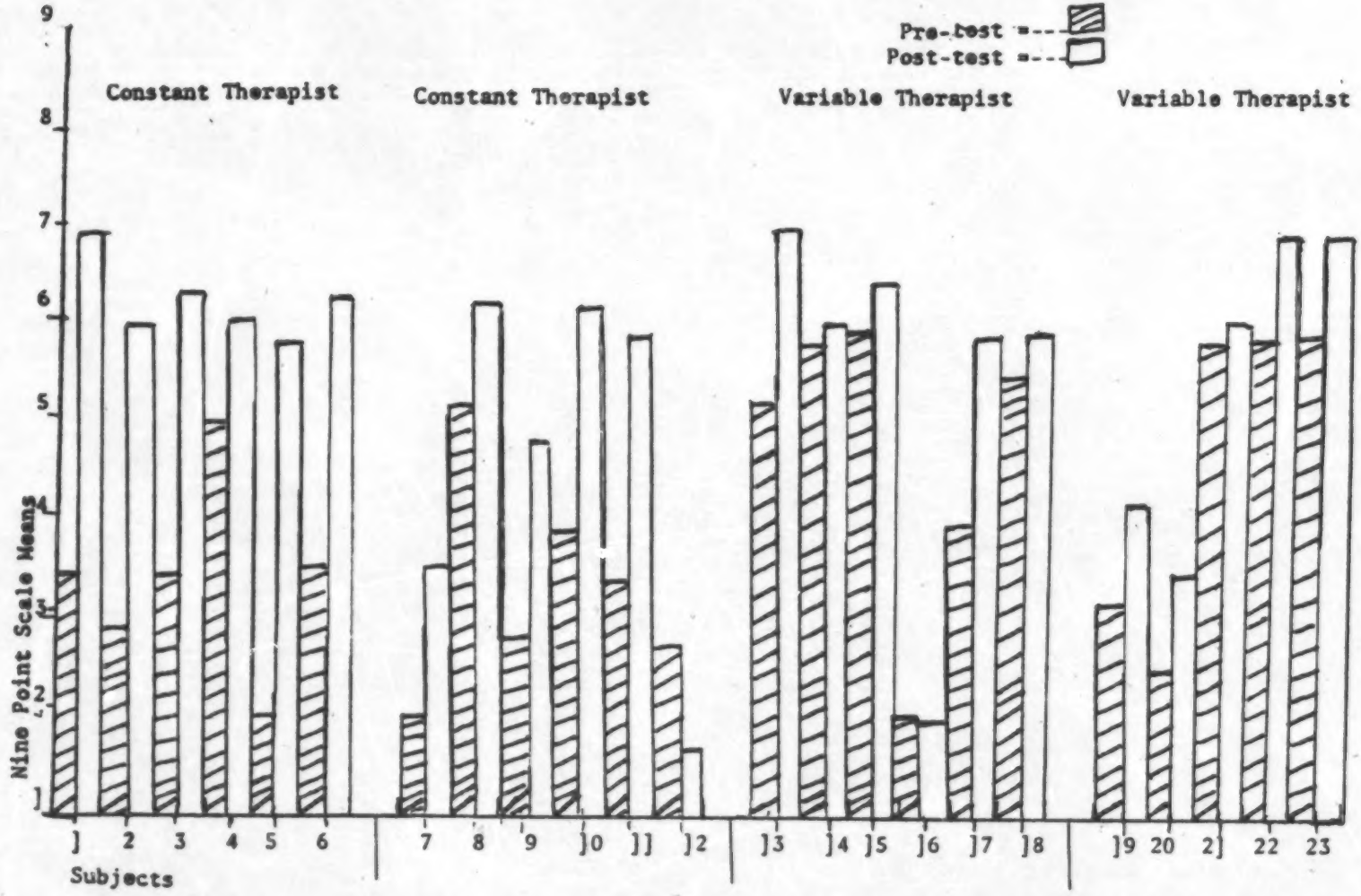


Figure 14. Morning groups Activity 2 pre-test/post-test comparison.

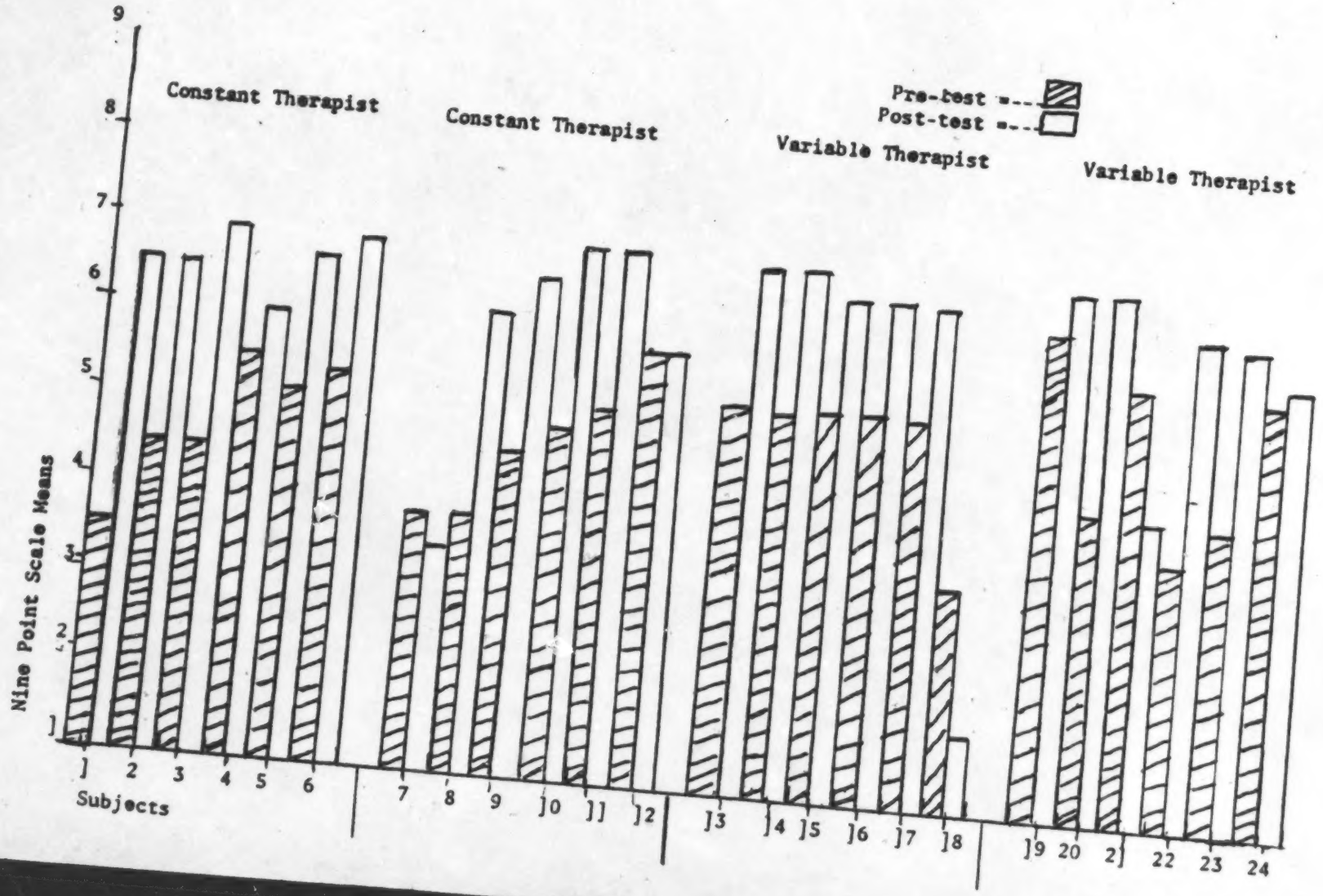
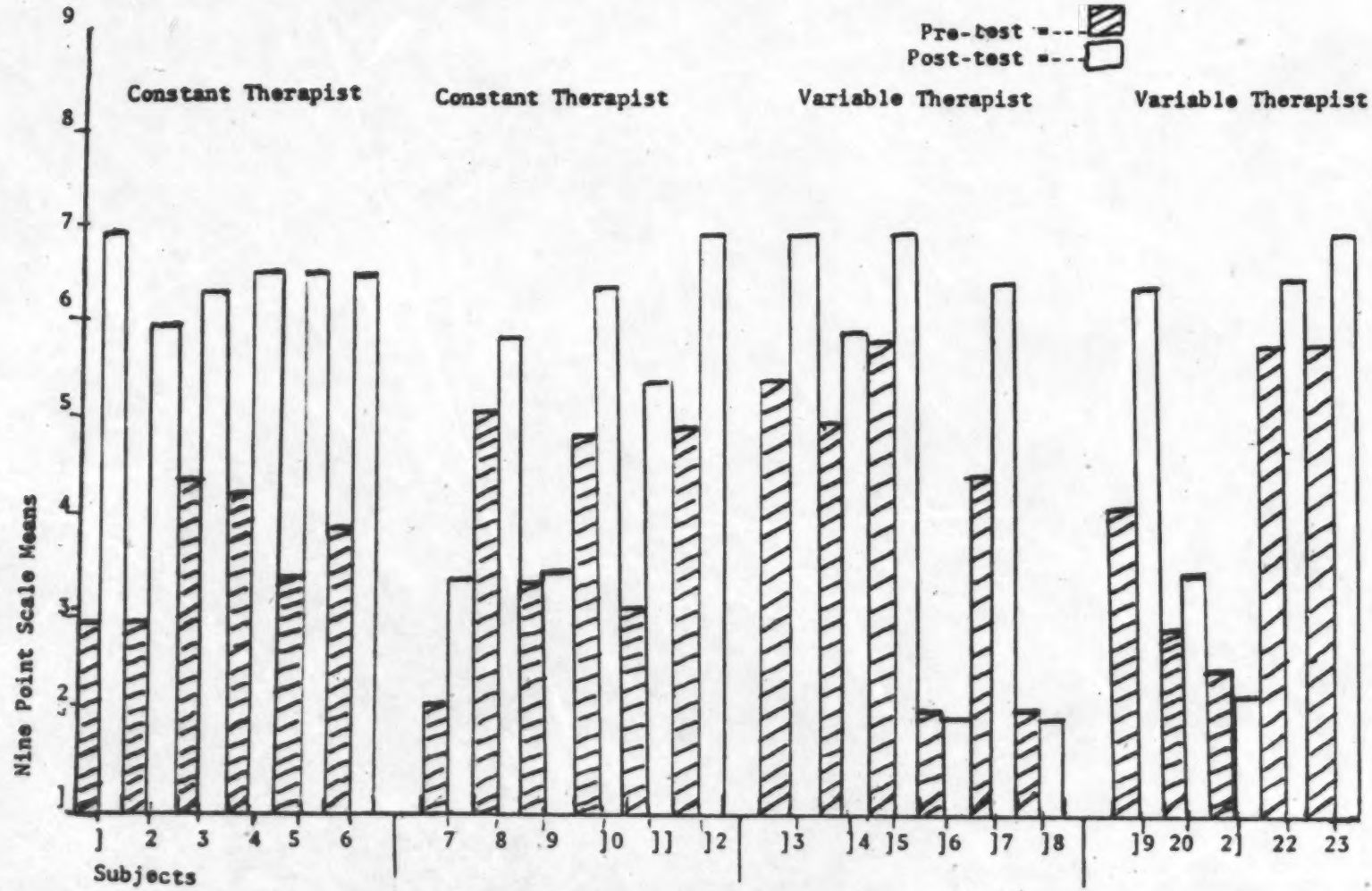
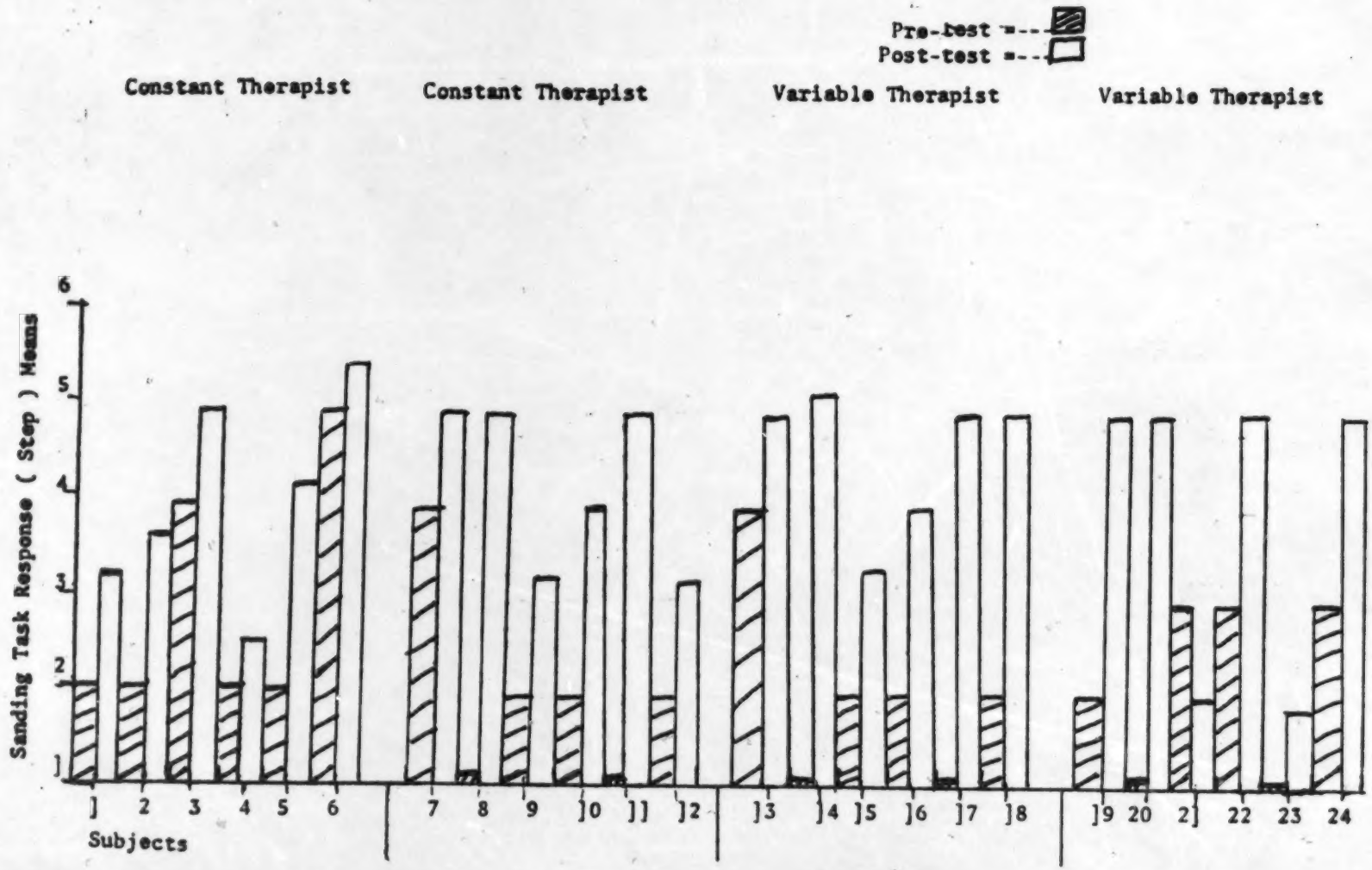

Constant Therapist
Constant Therapist
Variable Therapist
Variable Therapist
Pre-test
Post-test
Nine Point Scale Means
Subjects
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Figure 14. Afternoon groups Activity 2 pre-test/post-test comparison.



Figure]5. Morning groups Sanding Task pre-test/post-test comparison.



Figure]5. Afternoon groups Sanding Task pre-test/post-test comparison.